

REMARKS

The Office Action of **June 19, 2003**, has been received and its contents carefully noted. Applicants respectfully submit that this response is timely filed and fully responsive to the Office Action.

Claims 1-46 were pending the present application prior to the above amendment. By the above amendment, claims 1-8, 14, and 17-18 are canceled, and claims 9 and 40 are amended. No new matter is introduced (see, e.g., claim 14 as originally filed, and Specification, page 7, lines 25-27). Accordingly, claims 9-13, 15-16, and 19-46 remain pending in this application, of which claims 9, 19, 24, 26, 32, 34, and 44 are independent, and which are believed to be in condition for allowance for at least the reasons stated below.

35 U.S.C. §112, Second Paragraph, Objections

In response to the objection of claims 1 and 14, claims 1 and 14 have been cancelled. In addition, independent claim 9 has been amended to recite the subject matter from cancelled claim 14, amended as suggested by the Examiner. Further, claim 40 has been amended to be consistent with the changes suggested by the Examiner. Specifically, claims 9 and 40 have been amended to recite “a temperature rising rate and a temperature lowering rate for the lamp light irradiation are within a range of ± 30 to 300 °C/minute,” as suggested by the Examiner. Thus, Applicants submit that all of the present claims are in compliance with 35 U.S.C. §112 and no further rejection on such a basis is anticipated. If, however, the Examiner disagrees, the Examiner is invited to contact the undersigned attorney who will be happy to work with the Examiner in a joint effort to derive a mutually satisfactory solution.

35 U.S.C. §§102 and 103 Rejections

Claims 9-13, and 15-16 were rejected under 35 U.S.C. §102 as being anticipated by *Aya et al.* (USPA 2001/0003659); claims 19-39 and 41-46 were rejected under 35 U.S.C. §103 as being unpatentable over *Aya et al.* in view of *Takeya et al.* (USP 6,509,579); and claim 40 was rejected under 35 U.S.C. §103 as being unpatentable over *Aya et al.* and *Takeya et al.* in view of *Kinoshita et al.* (USP 5,948,496). Applicants respectfully contend that independent claims 9, 19, 24, 26, 32, 34, and 44 and claims dependent therefrom are clearly

patentably distinct over the applied references, alone or in combination, for at least the reasons advanced below.

**The Applied References Alone or in Combination Fail to Teach or Suggest the Claimed
Invention**

Applicants respectfully contend that the applied references, alone or in combination, clearly fail to teach or suggest each and every element defined by the pending claims. For example, independent claim 1, as amended, recites “a temperature rising rate and a temperature lowering rate for the lamp light irradiation are within a range of +/- 30 to 300 °C/minute.” Accordingly, the present Office Action, at page 5, properly admits that *Aya et al.* “fails to consider the heating or cooling rates to the heating process.”

The present Office Action, at page 5, then attempts to cure the admitted deficiencies in *Aya et al.* by asserting that *Kinoshita et al.* allegedly discloses “the raising and cooling rates in going from a amorphous to crystalline state to be about 10 Degrees C/min,” citing to the abstract of *Kinoshita et al.* However, the abstract of *Kinoshita et al.* is silent with respect to any specific rates, much less “a temperature rising rate and a temperature lowering rate for the lamp light irradiation are within a range of +/- 30 to 300 °C/minute.” In fact, the only mention of any specific rate in *Kinoshita et al.* is with respect to “a temperature raising rate” at col. 12, lines 38-49, which states (emphasis added):

Table 1 shows the results of a DSC thermal analysis (a **temperature raising rate of 10.degree. C./min**) of the initial crystallization for the Ag--In--Sb--Te recording layer with nitrogen added. The density of nitrogen in the recording layer is increased as the flow rate of nitrogen at the time of growing the layer is increased.

However, not only does the disclosed rate of “10.degree. C./min” in *Kinoshita et al.* fail to teach or suggest “a range of +/- 30 to 300 °C/minute,” *Kinoshita et al.* is silent with respect to **any specific temperature lowering rate**, much less “a temperature lowering rate for the lamp light irradiation [being] within a range of +/- 30 to 300 °C/minute.” Accordingly, the present Office Action fails to make a *prima facie* case for obviousness with respect to “a temperature rising rate and a temperature lowering rate for the lamp light irradiation are within a range of +/- 30 to 300 °C/minute,” as presently recited in independent claim 9.

Similarly, independent claims 19, 24, 26, 32, 34, and 44 recite "forming a second crystalline semiconductor film by irradiating a laser light to the first crystalline semiconductor film," which, contrary to the present Office Action, is not disclosed, taught or suggested by *Aya et al.* and *Takeya et al.*, taken alone or in combination. Accordingly, the present Office Action, at page 6, properly admits that *Aya et al.* "fails to apply a second layer of crystalline film by irradiation a laser light to the first crystalline semiconductor film."

The present Office Action, at page 6, then attempts to cure the admitted deficiencies in *Aya et al.* by asserting that "in making a laser device *Takeya et al.* makes a second crystalline layer," citing to claim 2 of *Takeya et al.* However, *Takeya et al.* is silent with respect to **any irradiating process**, much less "forming a second crystalline semiconductor film by irradiating a laser light to the first crystalline semiconductor film." Accordingly, *Aya et al.* and *Takeya et al.*, taken alone or in combination, fail to disclose, teach or suggest "forming a second crystalline semiconductor film by irradiating a laser light to the first crystalline semiconductor film," as recited in independent claims 19, 24, 26, 32, 34, and 44.

**Kinoshita et al. Constitutes Non-Analogous Prior Art and Cannot be Properly
Combined with Aya et al. and/or Takeya et al.**

In addition, *Kinoshita et al.* constitutes non-analogous prior art and cannot be properly combined with *Aya et al.* and/or *Takeya et al.* Specifically, to rely on a reference under 35 U.S.C. §103, the reference **must be analogous prior art**, as required by MPEP §2141.01(a), which states:

The examiner must determine what is "analogous prior art" for the purpose of analyzing the obviousness of the subject matter at issue. "In order to rely on a reference as a basis for rejection of an applicant's invention, **the reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the inventor was concerned.**" In re Oetiker, 977 F.2d 1443, 1446, 24 USPQ2d 1443, 1445 (Fed. Cir. 1992). See also In re Deminski, 796 F.2d 436, 230 USPQ 313 (Fed. Cir. 1986); In re Clay, 966 F.2d 656, 659, 23 USPQ2d 1058, 1060-61 (Fed. Cir. 1992) ("A reference is reasonably pertinent if, even though it may be in a different field from that of the inventor's endeavor, it is one which, because of the matter with which it deals, logically would have commended itself to an inventor's attention in considering his problem."); and Wang Laboratories Inc. v. Toshiba Corp., 993 F.2d 858, 26 USPQ2d 1767 (Fed. Cir. 1993).

However, *Kinoshita et al.* fails the above-noted two-part test. First, *Kinoshita et al.* is not in the same field of Applicants' endeavor. Specifically, *Kinoshita et al.* is directed to the

field of “optical recording media” (col. 1, lines 5-13). By contrast, the invention recited in independent claims 9, 19, 24, 26, 32, 34, and 44 is directed to the completely different field of “laser annealing” (Specification, p. 1, lines 5-11).

Second, *Kinoshita et al.* is not reasonably pertinent to the particular problem with which Applicants were concerned. Specifically, *Kinoshita et al.* is concerned with problems relating to optical recording media, wherein “a recording layer is flowed or a film of the multilayer structure is flaked off due to a thermal shock caused at the time of projecting the laser beam thereon or because a metal used for the reflection layer is degraded,” and “[s]uch a limited number of times that information can be repeatedly recorded is not suitable for an application in which rewriting is frequently carried out,” and “that the recording sensitivity be improved in order to reduce the production cost” (col. 1, line 56 to col. 2, line 5).

By contrast the invention recited in independent claims 9, 19, 24, 26, 32, 34, and 44 is concerned with the completely different problems related to laser annealing, wherein “[i]f distortion exists in the semiconductor film in an insulating gate semiconductor device, then potential barriers and trap levels are formed due to the distortion, and therefore the interface level between an active layer and a gate insulating film becomes high,” and “an electric field is not applied uniformly if distortion exists, and this becomes a cause of operation failures of the semiconductor device,” and “distortion of the surface of the semiconductor film damages the levelness of the gate insulating film, deposited by sputtering or CVD, and causes reliability to drop due to occurrences of insulating defects and the like” (Specification, p. 2, lines 22-33).

Thus, *Kinoshita et al.* fails the above-noted a two-part test. Accordingly, *Kinoshita et al.* constitutes non-analogous prior art and cannot be properly combined with *Aya et al.* and/or *Takeya et al.*

The Dependent Claims are Allowable over the Applied References Alone or in Combination

Dependent claim 10-13, 15-16, 20-23, 25, 27-31, 33, 35-43, and 45-46 are allowable over the applied references, alone or in combination, on their own merits and for at least the reasons discussed above with respect to independent claims 9, 19, 24, 26, 32, 34, and 44.

The Non-Applied References

The references that have been cited, but not applied by the Examiner, have been taken into consideration during formulation of this response. However, since these references were not considered by the Examiner to be of sufficient relevance to apply against any of the claims, no detailed comments thereon is believed to be warranted at this time.

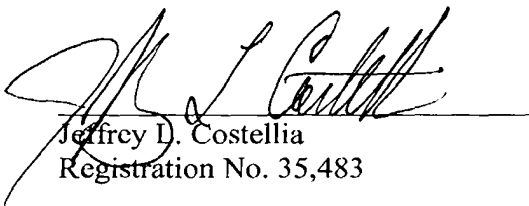
Conclusion

Therefore, it is believed that independent claims 9, 19, 24, 26, 32, 34, and 44 and claims dependent therefrom are clearly patentably distinct over the applied references, alone or in combination. In view of the foregoing remarks, reconsideration and withdrawal of the rejection is earnestly solicited.

Having responded to all rejections set forth in the outstanding final Office Action, it is submitted that the claims are now in condition for allowance. An early and favorable Notice of Allowance is respectfully solicited. In the event that the Examiner is of the opinion that a brief telephone or personal interview will facilitate allowance of one or more of the above claims, the Examiner is courteously requested to contact Applicants' undersigned representative.

Respectfully submitted,

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